氦原子的基态能量和弱相互作用之间的联系

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摘要：氦原子的基态能量可以用公式表示出来，并且与实验的测量值近似。并且这个结果表明，氦原子的基态能量是氦原子和弱相互作用之间的耦合，并且以此为基础，可以推测出来弱相互作用和强相互作用的耦合常数的公式。

关键词：氦原子，基态能量，弱相互作用，耦合常数。

我们知道氦原子的基态能量可以用这个公式表示，$\frac{(h)(R_\infty)(c)}{(e_o)}$，然后我发现，又可以表示为，$\frac{(h)(R_\infty)(c)}{(e_o)} = (R_\infty)(\mu_o)$。所以，氦原子的基态能量可以用这个公式表示，$\frac{(h)(R_\infty)(c)}{(e_o)} * \frac{(g_z)^2}{(g_e)^2}$，或者，$\frac{(R_\infty)^2(m_e)(g_z)}{(e_o)2\pi}$，或者，$\frac{(R_\infty)^2(m_e)[\alpha_o]2\pi}{(e_o)(g_W)^2}$，或者，$\frac{(R_\infty)^2(c)^2(m_e)2\pi}{(g_W)(g_s)}$。

然后根据这个“或者”，就可以推出弱相互作用和强相互作用的耦合常数的公式了。

并且，这几个等式是和下面这几个等式之间的联系也是自洽的。

$$\begin{cases} 1, \frac{(m_e)(R_\infty)(G_N)}{(a_0)} = 2\pi(m_e)[\alpha_o](c)\ , \\ 2, \frac{(e_o)(R_\infty)}{4\pi(\varepsilon_0)(a_0)} = (c)\ , \\ 3, \frac{1}{2}(m_e)[\alpha_o]^2(c)^2 = \frac{(m_{atom})(c)^2}{2\pi(R_\infty)}\ , \\ 4, \frac{(e_o)^2(R_\infty)}{4\pi(\varepsilon_0)(a_0)} = \frac{(m_e)(R_\infty)(G_N)}{(K_B)}\ , \\ 5, 2\pi(\mu_B)(m_e) = (m_e)(R_\infty)^2(G_N) * (m_e)(R_\infty)^2(G_N)\ , \\ 6, \frac{(m_{atom})(c)^2}{(r_{atom})} = \frac{[\alpha_o](c)(r_e)(2\pi)^4}{(a_0)}\ , \\ 7, \frac{(e_o)}{2(r_{atom})} = (R_\infty)^3(a_0)^3(2)^3(2\pi)^6\ , \\ 8, \frac{(m_e)[\alpha_o]^2(c)^2}{2(r_e)} = (c)2(r_{atom})(2\pi)^4\ , \\ 9, \frac{(m_{atom})(G_N)}{(a_0)^2} = (2\pi)^3(e_o)\ , \end{cases}$$

并且它和现在用的物理常数公式也是自洽的，但是其中有一点儿瑕疵就是，有时候可能量纲不对。但是从数值关系上来说，这些是没有问题的。我把这些整理这些东西出来以后，脑海里涌现出的想法就是，如果要兼容现在物理学上的一些问题，并提出解决方法及修正方案，那么这些问题最终指向的矛头就是，现在物理学上的量纲关系是存在问题的。

因为按照我现在推出来物理常数关系式，忽略量纲关系，仅从数值上来看，如果现在你任意定义了某个物理常数的数值，你就可以通过这几个等式，把其它的物理常数数值推出来，然后再通过这个就可以算出相互作用的耦合常数的数值，耦合常数的数值算出来了，再通过这个就可以算出基本“粒子”的“质量”。

基本“粒子”的“质量”的关系式见下图，为什么用约等于，当然因为我是猜的，具体验证是交给你们了，如有雷同，那一定是抄袭我的。

$$\frac{(m_W)}{(m_h)} \approx (g_W)\ ,\ \frac{(m_Z)}{(m_h)} \approx (g_z)\ ,\ \frac{(m_c)}{(m_t)} \approx [\alpha_o]\ ,\ \frac{(m_c)}{(m_s)} \approx \frac{2\pi}{(g_W)(g_z)} \approx \frac{(g_W)}{[\alpha_o]2\pi}\ ,$$

$$\frac{(m_b)}{(m_\tau)} \approx 2\pi(g_e)(g_s)\ ,\ \frac{(m_U)}{(m_e)} \approx (g_z)2\pi\ ,\ \frac{(m_\tau)}{(m_\mu)} \approx \frac{(g_s)(g_W)}{[\alpha_o]2\pi}\ ,$$

$$\frac{(m_s)}{(m_e)} \approx \frac{(g_s)(g_z)}{(g_W)[\alpha_o]}\ ,\ \frac{(m_\mu)}{(m_e)} \approx \frac{(g_z)(g_W)}{(g_e)[\alpha_o]}\ ,\ \frac{(m_Z)}{(m_\tau)} \approx \frac{(g_z)(g_W)}{(g_s)[\alpha_o]}\ ,\ \frac{(m_d)}{(m_e)} \approx \frac{(g_W)(g_e)^2}{[\alpha_o]}\ 。$$



强、弱、电磁和引力四种基本相互作用中的耦合常数的大小大致如下：

相互作用	耦合常数
强相互作用	$g_s \simeq 1.214$
电磁相互作用	$g_e \simeq 0.302822$
弱相互作用	$g_W \simeq 0.6295, \quad g_Z \simeq 0.7180$
引力相互作用	$G_N \simeq 6.674 \times 10^{-11} \mathrm{m^3 kg^{-1} s^{-2}}$

本篇文章中的物理常数，请参照公元 2022 年 03 月 13 日，地球上任意一本物理的“官方指定用书”上的物理常数数值。参考文献我就不列了，因为这些都是新东西，以及本文中任意一个等式，你都可以带入现有的物理书上去验证、去思考。

另外，本人售卖本篇文章中序号 1-9 的公式命名权，有意者请直接给我打钱。

参考文献：无。

Relationship between ground state energy and weak interaction of helium atoms

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Abstract: The ground state energy of helium atom can be expressed by formula, and it is close to the experimental value. And this result shows that the ground state energy of helium atom is the coupling between hydrogen atom and weak interaction, and on this basis, the formulas of coupling constants of weak interaction and strong interaction can be deduced.

Key words: Helium atom, ground state energy, weak interaction, coupling constant.

We know that the ground state energy of hydrogen atom can be expressed by this formula, $\frac{(h)(R_\infty)(c)}{(e_o)}$. and then I found that it can also be expressed as $\frac{(h)(R_\infty)(c)}{(e_o)} = (R_\infty)(\mu_o)$. Therefore, the ground state energy of helium atom can be expressed by this formula, $\frac{(h)(R_\infty)(c)}{(e_o)} * \frac{(g_z)^2}{(g_e)^2}$, or, $\frac{(R_\infty)^2(m_e)(g_z)}{(e_o)2\pi}$, or, $\frac{(R_\infty)^2(m_e)[\alpha_o]2\pi}{(e_o)(g_w)^2}$,or, $\frac{(R_\infty)^2(c)^2(m_e)2\pi}{(g_w)(g_s)}$.

Then, according to this " or", the formulas of coupling constants of weak interaction and strong interaction can be deduced.

$$\begin{cases} 1, \frac{(m_e)(R_\infty)(G_N)}{(a_0)} = 2\pi(m_e)[\alpha_o](c) \ , \\ 2, \frac{(e_o)(R_\infty)}{4\pi(\varepsilon_0)(a_0)} = (c) \ , \\ 3, \frac{1}{2}(m_e)[\alpha_o]^2(c)^2 = \frac{(m_{atom})(c)^2}{2\pi(R_\infty)} \ , \\ 4, \frac{(e_o)^2(R_\infty)}{4\pi(\varepsilon_0)(a_0)} = \frac{(m_e)(R_\infty)(G_N)}{(K_B)} \ , \\ 5, 2\pi(\mu_B)(m_e) = (m_e)(R_\infty)^2(G_N) * (m_e)(R_\infty)^2(G_N) \ , \\ 6, \frac{(m_{atom})(c)^2}{(r_{atom})} = \frac{[\alpha_o](c)(r_e)(2\pi)^4}{(a_0)} \ , \\ 7, \frac{(e_o)}{2(r_{atom})} = (R_\infty)^3(a_0)^3(2)^3(2\pi)^6 \ , \\ 8, \frac{(m_e)[\alpha_o]^2(c)^2}{2(r_e)} = (c)2(r_{atom})(2\pi)^4 \ , \\ 9, \frac{(m_{atom})(G_N)}{(a_0)^2} = (2\pi)^3(e_o) \ , \end{cases}$$

And it is also self-consistent with the physical constant formula used now, but there is a slight flaw in it, that is, sometimes the dimension may be wrong. But numerically speaking, there is no problem with these. After sorting out these things, the idea that emerges in my mind is that if we want to be compatible with

some problems in physics now, and put forward solutions and correction schemes, then the ultimate target of these problems is that there is a problem with the dimensional relationship in physics now.

Because according to the physical constant relation that I have deduced now, ignoring dimensional relation, only from the numerical point of view, if you define the numerical value of a certain physical constant arbitrarily now, you can deduce the numerical value of other physical constants through these equations, and then you can calculate the numerical value of the coupling constant of interaction through this, and then you can calculate the "mass" of the basic "particle" through this.

The relational expression of "quality" of basic "particles" is shown in the figure below. Why is about equal to? Of course, because I guessed, the specific verification is given to you. If there is any similarity, it must be copied from me.

$$\frac{(m_W)}{(m_h)} \approx (g_w)\ ,\ \frac{(m_Z)}{(m_h)} \approx (g_z)\ ,\ \frac{(m_c)}{(m_t)} \approx [\alpha_o]\ ,\ \frac{(m_c)}{(m_s)} \approx \frac{2\pi}{(g_w)(g_z)} \approx \frac{(g_w)}{[\alpha_o]2\pi}\ ,$$

$$\frac{(m_b)}{(m_\tau)} \approx 2\pi(g_e)(g_s)\ ,\ \frac{(m_U)}{(m_e)} \approx (g_z)2\pi\ ,\ \frac{(m_\tau)}{(m_\mu)} \approx \frac{(g_s)(g_w)}{[\alpha_o]2\pi}\ ,$$

$$\frac{(m_s)}{(m_e)} \approx \frac{(g_s)(g_z)}{(g_w)[\alpha_o]}\ ,\ \frac{(m_\mu)}{(m_e)} \approx \frac{(g_z)(g_w)}{(g_e)[\alpha_o]}\ ,\ \frac{(m_Z)}{(m_\tau)} \approx \frac{(g_z)(g_w)}{(g_s)[\alpha_o]}\ ,\ \frac{(m_d)}{(m_e)} \approx \frac{(g_w)(g_e)^2}{[\alpha_o]}\ 。$$





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For the physical constants in this article, please refer to the values of physical constants in any physical "official designated book" on the earth on March 13th, 2022. I won't list the references, because these are all new things, and any equation in this article, you can bring it into the existing physics book to verify and think about it.

In addition, I sell the naming rights of the formulas numbered 1-9 in this article. If you are interested, please transfer money to me directly.

Reference: none.